

Name Key

Date _____

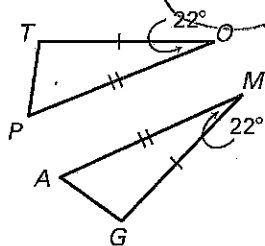
LESSON
5.6

Practice C

For use with pages 335-341

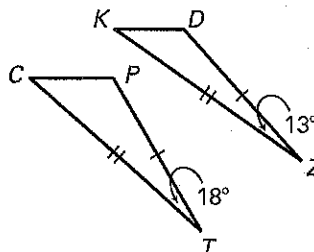
Complete with $<$, $>$, or $=$. Explain.

1. TP ? AG



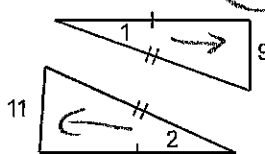
$=$

2. KD ? CP



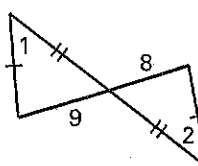
$<$

3. $m\angle 1$? $m\angle 2$



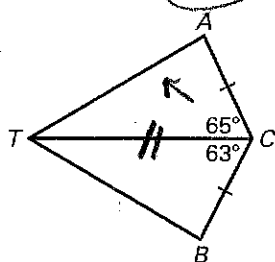
$<$

4. $m\angle 1$? $m\angle 2$



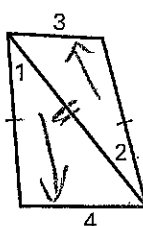
$>$

5. AT ? BT



$>$

6. $m\angle 1$? $m\angle 2$



$>$

In $\triangle DEF$, DM is a median. Determine if each statement is *always*, *sometimes*, or *never* true.

7. If $m\angle 2 > m\angle 1$, then $ED > FD$. *N*

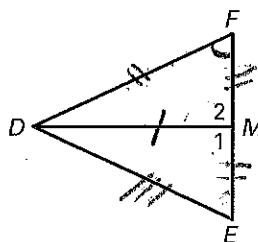
8. If $m\angle E > m\angle F$, then $\angle 1$ is obtuse. *N acute*

9. If $\angle 2$ is acute, then $m\angle F > m\angle E$. *Always*

10. If $m\angle E < m\angle F$, then $m\angle 1 < m\angle 2$. *Never*

11. If $m\angle 2 = 90^\circ$, then $ED > FD$. *N*

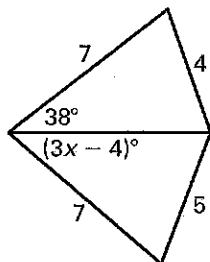
12. If $m\angle D = 90^\circ$, then $FD > ED$. *S*



LESSON
5.6
Practice C *continued*
 For use with pages 335-341

Use the Hinge Theorem or its converse and properties of triangles to write and solve an inequality to describe a restriction on the value of x .

13.

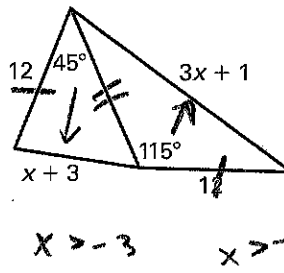


$$3x - 4 > 38$$

$$3x > 42$$

$$x > 14$$

14.



$$3x + 1 > x + 3$$

$$2x > 2$$

$$x > 1$$

$$x > -3$$

$$x > -\frac{1}{3}$$

15. **Sailing** Two families are going sailing. Family A leaves the marina and sails 2.3 miles due north, then sails 3 miles due west. Family B leaves the marina and sails 2.3 miles due south, then sails 3 miles in a direction 1° north of due east. Which family is farther from the marina? Explain your reasoning.

In Exercises 16-18, write an indirect proof.

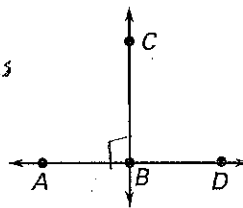
16. **GIVEN:** $\triangle JKL$ is a scalene triangle.

PROVE: No two angles of $\triangle JKL$ are congruent.

17. **GIVEN:** $\angle ABC \neq \angle DBC$

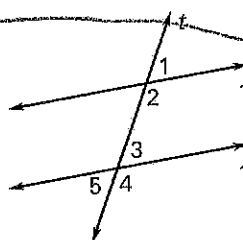
PROVE: $\overline{BC} \not\perp \overline{AD}$

Assume $\overline{BC} \perp \overline{AD}$
 then $\angle ABC$ is Rt \angle & $\angle DBC$ is Rt \angle



18. **GIVEN:** $\angle 1 \neq \angle 5$

PROVE: $\angle 2$ and $\angle 3$ are not supplementary.



16



Assume $\angle L \cong \angle K$

then $\overline{JK} \cong \overline{KL}$ by Conv BAT

This * contradicts the given

Our assumption is false

No 2 \angle s of $\triangle JKL$ are \cong

17

Assume $\overline{BC} \perp \overline{AD}$ then

$\angle ABC$ & $\angle DBC$ are right \angle s (def \perp lines)

$\angle ABC \cong \angle DBC$ (Rt \angle s are \cong)

* Contradicts given

Our assumption is false

$\overline{BC} \not\perp \overline{AD}$

18

Assume

$\angle 2$ & $\angle 3$ are supplementary

then $l_1 \parallel l_2$

b/c of Cons lat Conv.

then $\angle 1 \cong \angle 5$

b/c alt ext \angle s then

* Contradicts given

Geometry

Chapter Resource Book

5-85

Our assumption is false
 $\angle 2$ & $\angle 3$ are not suppl.